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May 13.

The President, Dr. Leidy, in the chair.

Fifteen persons present.

How Lycosa fabricates her Round Cocoon.—Dr. H. C. McCook said that while walking in the suburbs of Philadelphia lately, he found under a stone a female Lycosa (probably *L. riparia* Hentz), which he placed in a jar partly filled with dry earth. For two days the spider remained on the surface of the soil, nearly inactive. The earth was then moistened, whereupon (May 2) she immediately began to dig, continuing until she had made a cavity about one inch in depth and height. The top was then carefully covered over with a tolerably closely woven sheet of white spinning work, so that the spider was entirely shut in. This cavity was made against the glass side of the jar, and the movements of the inmate were thus exposed to view. Shortly after the cave was covered, the spider was seen working upon a circular cushion of beautiful white silk, about three-fourths of an inch in diameter, which was spun upwards in a nearly perpendicular position against the earthen wall of the cave. The cushion looked so much like the cocoon of the common tube-weaver, *Agalena nœvia*, and the whole operations of the Lycosa were so like those of that species when cocooning, that the speaker was momentarily possessed with the thought that he had mistaken the creature's identity altogether, and again examined her carefully, only to be assured that she was indeed a Lycosa. After an absence of half an hour, Dr. McCook returned to find that in the interval the spider had oviposited against the central part of the silken cushion and was then engaged in enclosing the hemispherical egg-mass with a silken envelope. The mode of spinning was as follows: the feet clasped the circumference of the cushion, and the body of the animal was slowly revolved; the abdomen—now greatly reduced in size by the extrusion of the eggs—was lifted up, thus drawing out short loops of silk from the expanded spinnerets, which, when the abdomen was dropped again, contracted and left a flossy curl of silk at the point of attachment. The abdomen was also swayed back and forwards, the filaments from the spinnerets following the motion as the spider turned, and thus an even thickness of silk was laid upon the eggs. The same behavior marked the spinning of the silken button or cushion, in the middle of which the eggs had been deposited.

At this stage, Dr. McCook left for an evening engagement, with his ideas as to the cocooning habits of *Lycosa* very much confused, indeed, by an observation so opposed to the universal experience. Returning to his desk in an hour and a half, he was once more assured by the sight of a round silken ball dangling from the apex of the spider's abdomen, held fast by short threads to the spinnerets. The cushion, however, had disappeared.

The mystery (as it had seemed to him) was solved: the Lycosa after having placed her eggs in the centre of the silken cushion, and covered them over, had gathered up the edges and so united them and rolled them as to make the normal globular cocoon of her genus, which she at once tucked under her abdomen in the usual way. This was a most interesting observation, and Dr. McCook thought had not before been made; at least Lycosa's manner of fabricating a cocoon had been heretofore unknown to him; and by reason of her subterranean habit the opportunity to observe it was rare. He had often wondered how the round egg-ball was put together, and the mechanical ingenuity and simplicity of the method were now apparent. The period consumed in the whole act of cocooning was less than four hours; the act of ovipositing took less than half an hour. Shortly after the egg-sac was finished, the mother cut her way out of the silken cover. She had evidently thus secluded herself for the purpose of spinning her cocoon. While feeding the spider some flies, the cave was accidentally filled up, and no effort had been made to dig another, although it is the custom of this genus, in natural environment, to remain pretty closely within such a habitation while carrying the cocoon.

One month after the above date (June 4), the spider was found with the young hatched, and massed upon her body from the caput to the apex of the abdomen. The empty egg-sac still clung to the spinnerets, and the younglings were grouped over the upper part of the same. The abdomens of the little spiders were of a light yellow color, the legs a greenish brown or slate-color, and the whole brood were tightly compacted upon and around each other, the lower layers apparently holding on to the mother's body, and the upper upon those beneath. Twenty-four hours thereafter, the cocoon-case was dropped, and the spiderlings clung to the mother alone. An examination of the cocoon showed that the young had escaped through the thin seam or joint formed by the union of the egg-cover with the circular cushion, when the latter was pulled up at the circumference into globular shape. There was no flossy wadding within—as is common with orb-weaving spiders, for example—nothing but the pinkish shells of the escaped young. On June 11, about one hundred of the spiderlings had abandoned the maternal perch, and were dispersed over the inner surface of the jar, and upon a series of lines stretching from side to side. About half as many more remained upon the mother's back; but by the 13th, all had dismounted. Meantime, they had increased in size at least one-half, apparently without food.